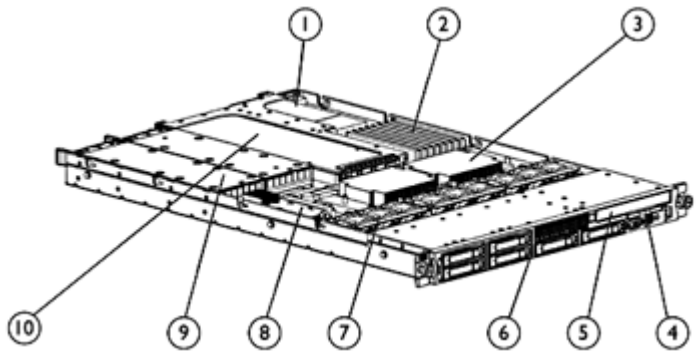
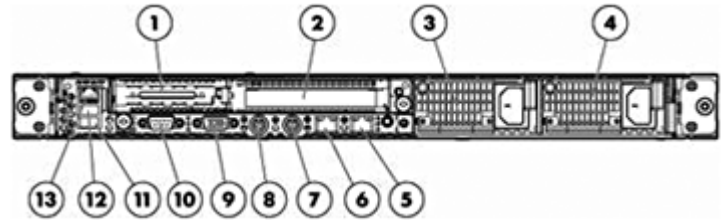
Overview





Front View:

1. Low-profile x8 PCI-Express slot
2. Eight PC2-5300 FB-DIMMs (DDR2 667) slots
3. Up to two Intel Quad-Core or Dual-Core Xeon™ processors
4. Slide-out System Insight Display
5. Slimline removable media bay
6. Up to six SAS/SATA hot plug drive bays
7. Removable fans for easy serviceability
8. Choice of Smart Array P400i Controller or Smart Array E200i Controller
9. Redundant Hot Plug Power Supplies (upgradeable option)
10. Full length/height x8 PCI-Express Slot (optional PCI-X)

Rear View:

1. PCI Express expansion slot 1, low-profile, half-length
2. PCI Express expansion slot 2
3. Power supply bay 2
4. Power supply bay 1
5. NIC 2 connector
6. NIC 1 connector
7. Keyboard connector
8. Mouse connector
9. Video connector
10. Serial connector
11. USB connector
12. USB connector
13. iLO 2 NIC connector

What's New

- New Quad-Core Intel Xeon 5400 sequence processor models are now available with 1333MHz Front Side Bus speed, with 12M (2x6MB) L2 Cache.

At A Glance

Combining concentrated 1U compute power, integrated Lights-Out management, and essential fault tolerance, the HP ProLiant DL360 is optimized for space constrained installations. Dual-core Xeon processors, DDR2 Fully Buffered DIMMs, Serial Attached SCSI (SAS) and PCI Express technology provide a high performance system ideal for the full range of scale out applications. What's more, the HP ProLiant DL360 G5 steps up the fault tolerant in an ultra dense platform with redundant power, redundant fans, mirrored memory or online spare memory, embedded RAID capability, and full-featured remote Lights-Out management.

- Processors:
  - Up to (2) Quad-Core or Dual-Core Intel® Xeon® processor 5000 sequence
  - Up to (2) Quad-Core Intel Xeon processor 5400/5300 sequence
  - Intel 5000P chipset supporting up to a 1333MHz Front Side Bus (FSB)
- Memory:
  - Up to 32 GB of memory, supported by (8) slots of PC2-5300 Fully Buffered DIMMs (DDR2-667); 4:1 interleaving; memory mirroring; online spare

Overview

- Storage Controller:
  - Performance Models: HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) (512MB BBWC optional)
  - Base Models: HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5) (512MB BBWC optional)
  - Entry Models: HP Smart Array E200i/64MB Controller (RAID 0/1/1+0) (128MB BBWC optional)
- Internal Drive Support:
  - Up to (6) small form factor (SFF) hot-plug drive bays
  - Slimline media bay supporting DVD, CD or Floppy drive
- Network Controller:
  - Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- Expansion Slots:
  - Two PCI-Express expansion slots: (1) full-length, full-height slot; (1) low-profile slot
- USB 2.0 Ports:
  - 4 Total: (1) front, (1) internal and (2) rear accessible ports
- Redundancy:
  - Multiple layers of fault tolerance through critical component redundancy (power supply and fan redundancy), mirrored memory, embedded RAID capability, and full-featured remote Lights-Out management
- Management:
  - HP Insight Control Environment server management software
  - Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - HP Power Meter and Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management with industry leading energy efficiency and savings on system power and cooling costs
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics
  - ProLiant Essential Foundation Pack standard, including HP Systems Insight Manager, SmartStart, SmartStart Scripting Toolkit, Subscriber's Choice and ROM Based Setup Utility (RBSU)
  - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health, UID, and SmartStart
- Form Factor:
  - 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep
- Deployment/Serviceability:
  - Sliding rails for in rack servicing ship standard; optional 1U Cable Management Arm
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA0-6375ENW.pdf.
NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Quad-Core Intel® Xeon Processor X5460 (3.16 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon Processor E5405 (2.00 GHz, 80 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5320 (1.86 GHz 80 Watts, 1066 FSB) Quad-Core Intel Xeon Processor L5320 (1.86 GHz 50 Watts, 1066 FSB) Quad-Core Intel Xeon Processor E5310 (1.60 GHz 80 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5150 (2.67 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage) Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB) NOTE: Up to 2 processors supported. Performance configurations include two processors. NOTE: Intel 5300 sequence processors are 64-bit, Quad-Core, and supports Intel VT technology. Intel 5100/5000 sequence processors are 64-bit, Dual-Core, and supports Intel VT technology.
Cache Memory One of the following depending on Model	8MB (2 x 4MB) Level 2 cache (5300 sequence) 4MB (1 x 4MB) Level 2 cache (5100 sequence) 4MB (2 x 2MB) Level 2 cache (5000 sequence)
Upgradeability	Upgradeable to quad or dual processing Future upgradeable to Xeon Series 5300 Quad-Core, or 5100 Dual-Core processors (Please contact your regional sales support to determine quad core upgradeability. Some of the earlier shipping models may not support this upgrade)
Chipset	Intel 5000P chipset NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

Standard Features

Memory Protection & Functionality	Advanced ECC (multi-bit error protection), Online Spare, Mirroring 4-way interleaving

Memory

Type	PC2-5300 Fully Buffered DIMMs (DDR2-667)
Standard (Entry or Base Models)	1 GB (2 x 512 MB)
Standard (Performance Models)	2 GB (2 x 1 GB)
Standard (Performance Model E5345)	4 GB (4 x 1 GB)
Maximum	32 GB (8 x 4 GB)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Network Controller

Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

Expansion Slots

Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug	PCI Voltage
1	x8 PCI Express	11	0	no	N/A
2	x8 PCI Express	19	0	no	N/A
2	64-bit/133MHz PCI-X (option)	16	1	no	3.3 Volt

*NOTE: Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

**NOTE: Slots are enumerated differently based on OS. Microsoft OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Storage Controller
One of the following depending on Model

Performance Models:	HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6) **Available upgrades**: 512MB memory battery-backed write cache (BBWC) module for RAID 0/1/1+0/5/6.
Base Models:	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5) **Available upgrades**: 512MB memory battery for battery-backed write cache (BBWC) module for RAID 0/1/1+0/5/6, or battery-backed write cache for RAID 0/1/1+0/5/6.
Entry Models:	HP Smart Array E200i/64MB Controller (RAID 0/1/1+0) **Available upgrades**: 128MB memory battery for battery-backed write cache (BBWC) module for RAID 0/1/1+0/5.

Standard Features

Storage	Optical Drives (Slimline Drive bay)	Optional DVD-ROM, DVD/CD-RW Combo (standard in performance models), DVD-RW, or Slimline floppy drive	
	Drive Bays	Up to 6 Small Form Factor bays total NOTE: 4 bays active in most models. Smart Array P400i controller and Mini-SAS storage cable (P/N 399546-B21) required for activation of 5th and 6th drive bays.	
Maximum Internal Storage Type	Hot Plug Serial Attached SCSI (SAS)	876GB SAS	6 x 146GB SAS
	Hot Plug Serial ATA (SATA)	720GB SATA	6 x 120GB SATA
Interfaces	Keyboard	1	
	Mouse	1	
	Serial	1	
	Video	1	
	USB 2.0 Ports	4 total: 2 rear, 1 front, 1 internal NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.	
	Network RJ-45	2	
	iLO 2 remote management port	1	
Graphics	Integrated ATI ES1000, 32MB video standard • 16 bit color: maximum resolution of 1600 x 1200 • 32 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO 2 remote console is 1280x1024.		
Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)		
ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms. Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit http://www.hp.com/go/hpsim. HP SIM provides organizations with the following benefits:	

	• Simplifies and consolidates infrastructure lifecycle management using task and query based functionality • Provides the foundation for infrastructure automation and virtualization • Enables IT management based on business processes not hardware platforms • Lowers infrastructure maintenance cost and frees resources for innovation • Maximizes resource utilization with virtualization technologies • Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView
SmartStart	SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart. SmartStart version supported (minimum): SmartStart 7.60.
Insight Management Agents	Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers, Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage.
Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages: http://www.hp.com/go/support
Insight Diagnostics	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs: • Accelerated iSCSI Pack - enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network. • HP Insight Control Environment - is based on HP Systems Insight Manager and ProLiant Essentials software, and brings the value of

Insight Control to ProLiant customers by delivering comprehensive health and performance monitoring, remote control, vulnerability scanning and patch management as well as flexible deployment and power management through an integrated installation package and streamlined licensing. For more information, visit: http://www.hp.com/go/ice

- Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp.
- Server Migration Pack - Universal Edition - Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following:
  - Physical to ProLiant
  - Physical to virtual
  - Virtual to virtual
  - Virtual to ProLiant
- Performance Management Pack (offered exclusively through the Insight Control suites) - a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.
- Virtual Machine Management Pack - Get the most out of server virtualization by unifying the management of physical and virtual servers in HP Systems Insight Manager. The Virtual Machine Management Pack plug-in provides central management and control of VMware and Microsoft virtual machines and provides physical host to virtual machine association.
- Vulnerability and Patch Management Pack (offered exclusively through the Insight Control suites) - identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats.

Optional Remote Management Packs

- Integrated Lights-Out Advanced Pack - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication).
- Integrated Lights-Out Select Pack - upgrades the iLO 2 processor with enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, historical power reporting, power capping and enterprise security (directory services and two-factor authentication) for servers managed using remote consoles available

in iLO 2 Standard and iLO 2 Standard Blade Edition.

- **Insight Power Manager** (IPM) - upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessential.

Industry Standard Compliance

ACPI 2.0b Compliant
PCI 2.2 Compliant
WOL Support
Microsoft® Logo certifications
PXE Support
USB 1.1 and 2.0 Compliant

Remote Management

Integrated Lights-Out (iLO 2) Management 2

- Virtual Text Remote Console (pre-OS only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Integrated Remote Console (ActiveX Control client)
- Dedicated & full function shared network connectivity with VLAN
- Embedded system health
- Present power consumption
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- Advanced Encryption Standard (AES)/Triple Data Encryption Standard (3DES)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Standard Features

Intelligent Manageability	HP Systems Insight Manager SmartStart ROM-Based Setup Utility (RBSU) Remote-Flash Redundant ROM Integrated Management Log (IML) Server Health logging Automatic Server Recovery-2 (ASR-2) System Insight Display (SID) Dynamic sector repairing and drive parameter tracking (with Smart Array controllers) Hot Spare Boot NOTE: Upon the event of a failed processor or VRM in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s). Power Down Utility Pre-Failure Warranty (covers processors, as well as SAS hard drives and memory)
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Removable CD and Diskette Drive Assembly Serial interface control Administrator's password Integrated Lights-Out has 12 customizable user accounts and SSL encryption Integrated Lights-Out can be disabled via a Global Setting iLO Advance Pack supports directory services integration and two-factor authentication
Server Power Cords	High voltage power cord ships standard. NOTE: ProLiant DL servers no longer ship standard with NEMA power cords (187335-001) that allow connection to 110V wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the above NEMA power cord must be ordered separately.
UPS Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html
Power Supply	700W, Optional (1+ 1 redundant) power supply NOTE:PN 399542-B21 contains the optional power supply and an IEC power cable only; purchase if connecting to PDU/UPS that supports IEC cables.
System Fans	9 fans ship standard; N+1 fan redundancy standard

Standard Features

Required Cabling

For required cabling information, refer to the Web site at http://h18000.www1.hp.com/products/servers/proliantdl360/.

OS Support

Microsoft Windows 2000 Server
Microsoft Windows Server 2003
Novell NetWare
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
Solaris 10 32/64-bit
VMware Virtualization Software

NOTE: SAS and SATA models may have different OS support. Please see OS Support Matrix.
NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix page at: http://www.hp.com/go/supportos.
NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html
NOTE: For a listing of the latest drivers available for the HP ProLiant DL360, please see: http://h18023.www1.hp.com/support/files/server/us/index.html.
NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html
NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at: http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html.

Rack Airflow Requirements

Rack 10000 series Cabinets
The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/proliantdl360/index.html.

Rack Kit

The HP ProLiant DL360 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000*, 9000, 10000 and HP series) with an adjustment range to fit a rack depth of 21.25" to 37.75".

Standard Features

Telco Rack Support

HP ProLiant DL360 G5 Telco Rack Kit:
Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (http://www.racksolutions.com/hp/)

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.
http://www.hp.com/products/configurator

Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- Support - 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service - Installation and Start up only

Enhanced Service - optimize service level to increase IT performance and availability.

- Support - -3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux

O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Models

HP DL360 G5 Performance Models **Quad-Core Models** **DL360R05 X5450 4GB** 457922-001 **DL360R05 E5345 4GB** 435944-001 **Dual-Core Models** **DL360R05 5160 2GB** 416566-001 **DL360R05 5150 2GB** 416564-001	**Processor(s)** Two of the following depending on Model	(2) Quad-Core Intel Xeon X5450 Processor (3.00GHz, 120 Watts, 1333 FSB) (2) Quad-Core Intel Xeon E5345 Processor (2.33 GHz, 80 Watts, 1333 FSB) (2) Dual-Core Intel Xeon 5160 Processor (3.00 GHz, 80 Watts, 1333 FSB) (2) Dual-Core Intel Xeon 5150 Processor (2.66 GHz, 65 Watts, 1333 FSB)
	Cache Memory One of the following depending on Model	Quad-Core: 12MB (2x6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 Sequence Dual-Core: 4MB (1 x 4MB) Level 2 cache; Intel Xeon Processor 5100 Sequence
	Memory One of the following depending on Model	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667) 5100 Series 4 GB (4 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667) 5300/5400 Series
	Network Controller	Two embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB BBWC Controller (RAID 0/1/1+0/5/6)
	Hard Drive	No drives included; (6) drive bays active
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Slimline DVD/CD-RW Combo drive
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

HP DL360 G5 Base Models **Quad-Core Models** **DL360R05 E5440 2GB** 457923-001 **DL360R05 E5430 2GB** 457924-001 **DL360R05 E5420 2GB** 457925-001 **DL360R05 E5335 2GB** 435943-001 **DL360R05 E5320 1GB** 438313-001 **Dual-Core Models** **DL360R05 5160 1GB**	**Processor(s)** One of the following depending on Model	(1) Quad-Core Intel Xeon E5440 Processor (2.83 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon E5430 Processor (2.66GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon E5420 Processor (2.50GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon E5335 Processor (2.00 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon E5320 Processor (1.86 GHz, 80 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5160 Processor (3.00 GHz, 80 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5150 Processor (2.66 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5140 Processor (2.33 GHz, 65 Watts, 1333 FSB)
	Cache Memory One of the following depending on Model	Quad-Core: 12MB (2x6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 Sequence Dual-Core: 4MB (1 x 4MB) Level 2 cache; Intel Xeon Processor 5100 Sequence

Models

DL360R05 5150 1GB 416565-001 DL360R05 5140 1GB 416563-001 DL360R05 5140 1GB 416562-001	Memory One of the following depending on Model	2 GB (2x1GB) Standard on E5335 Model; PC2-5300 Fully Buffered DIMMs (DDR2-667) 1 GB (2 x 512 MB) Standard on E5320, 5140-5160, 5060 Models; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Optional DVD, DVD/CD-RW, or Floppy
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supply	(1) 700W power supply, redundant optional
	Fans	9 total, redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

HP DL360 G5 Entry Models Quad-Core Models DL360R05 E5405 1GB 457926-001 DL360R05 E5310 1GB 438312-001 Dual-Core Models DL360R05 5130 1GB 416561-001 DL360R05 5120 1GB 416560-001 DL360R05 5110 1GB 416559-001	Processor(s) One of the following depending on Model	(1) Quad-Core Intel Xeon Processor E5405 (2.00GHz 80 Watts, 1333 FSB) (1) Quad-Core Intel Xeon Processor E5310 (1.60 GHz 80 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5130 Processor (2.00 GHz, 65 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5120 Processor (1.86 GHz, 65 Watts, 1066 FSB) (1) Dual-Core Intel Xeon 5110 Processor (1.6 GHz, 65 Watts, 1066 FSB)
	Cache Memory One of the following depending on Model	Quad-Core: 12MB (2x6MB) Level 2 cache; Intel Xeon Processor 5400 Sequence 8MB (2 x 4MB) Level 2 cache; Intel Xeon Processor 5300 Sequence Dual-Core: 4MB (1 x 4MB) Level 2 cache; Intel Xeon Processor 5100 Sequence
	Memory	1 GB (2 x 512 MB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array E200i/64MB Controller (RAID 0/1/1+0)
	Hard Drives	No drives included; (4) drive bays active
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Optional DVD, DVD/CD-RW, or Floppy
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supply	(1) 700W power supply, redundant optional
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-Buy DL360R05 E5335 2GB, 2P 470064-382	Processor(s)	(2) Quad-Core Intel Xeon E5335 Processor (2.00 GHz, 80 Watts, 1333 FSB)
	Cache Memory	8MB (2 x 4MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Slimline CD-RW/DVD-ROM Combo
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

S-Buy DL360R05 E5335 2GB, 1P 470064-512	Processor(s)	(1) Quad-Core Intel Xeon E5335 Processor (2.00 GHz, 80 Watts, 1333 FSB)
	Cache Memory	8MB (2 x 4MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Slimline CD-RW/DVD-ROM Combo
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(1) 700W power supply, redundant optional
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

Smart Buys

S-Buy DL360R05 E5345 2GB 470064-513	**Processor(s)**	(1) Quad Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)
	Cache Memory	8MB (2 x 4MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Slimline CD-RW/DVD-ROM Combo
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5cm)

S-Buy DL360R05 E5345 4GB, 2P 470064-553	**Processor(s)**	(2) Quad Core Intel Xeon Processor E5345 (2.33 GHz, 1333 FSB)
	Cache Memory	8MB (2 x 4MB) Level 2 cache
	Memory	4 GB (2 x 2 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	Slimline CD-RW/DVD-ROM Combo
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5 cm)

Smart Buys

S-Buy DL360G5 E5420 SAS 2GB, 1P 459959-005	Processor(s)	(1) Quad-Core Intel® Xeon Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2x6MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	DVD-ROM
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(1) 700W power supply, redundant optional
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5 cm)

S-Buy DL360G5 E5420 SAS 4GB, 2P RPS 459960-005	Processor(s)	(2) Quad-Core Intel® Xeon Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2x6MB) Level 2 cache
	Memory	4 GB (2 x 2 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	DVD-ROM
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5 cm)

Smart Buys

S-Buy DL360G5 E5440 2GB, 1P RPS 459961-005	**Processor(s)**	(1) Quad-Core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2x6MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) Standard; PC2-5300 Fully Buffered DIMMs (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400i/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	No drives included; (4) drive bays active. (6) bays supported with optional storage cable (PN 399546-B21)
	Internal Storage	876GB SAS; 720GB SATA
	Optical Drive	DVD-ROM
	PCI-Express Slots	1 full-length x8 PCI-Express slot 1 low-profile x8 PCI-Express slot
	Power Supplies	(2) 700W power supplies, redundant
	Fans	9 total, N+1 redundancy standard
	Form Factor	Rack (1U), (1.75 in/4.45 cm); 27.75 inch depth (70.5 cm)

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Models	HP ProLiant DL360 G5 Rack CTO Chassis	399524-B21
	Factory Integrated Model ships with:	
	Two embedded NC373i Multifunction Gigabit Server Adapters Integrated Lights-Out 2 (iLO 2) embedded 1 full-length and 1 low-profile x8 PCI-Express slots 9 fans; N+1 fan redundancy (1) 700W power supply, redundant optional Rack (1U), (1.75 in/4.45 cm)	

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Processors	Quad-Core Intel Xeon Processor X5460 - 3.16GHz, 120 Watts, 1333 FSB	457929-L21
	Quad-Core Intel Xeon Processor X5450 - 3.00GHz, 120 Watts, 1333 FSB	462858-L21
	Quad-Core Intel Xeon Processor E5450 - 3.00GHz, 80 Watts, 1333 FSB	457931-L21
	Quad-Core Intel Xeon Processor E5440 - 2.83GHz, 80 Watts, 1333 FSB	457933-L21
	Quad-Core Intel Xeon Processor E5430 - 2.66GHz, 80 Watts, 1333 FSB	457935-L21
	Quad-Core Intel Xeon Processor E5420 - 2.50GHz, 80 Watts, 1333 FSB	457937-L21
	Quad-Core Intel Xeon Processor E5410 - 2.33GHz, 80 Watts, 1333 FSB	457939-L21
	Quad-Core Intel Xeon Processor E5405 - 2.00GHz, 80 Watts, 1333 FSB	457941-L21
	Quad-Core Intel Xeon Processor X5355 - 2.66GHz, 80 Watts, 1333 FSB	435956-L21
	Quad-Core Intel Xeon Processor E5345 – 2.33GHz, 80 Watts, 1333 FSB	435954-L21
	Quad-Core Intel Xeon Processor E5335 – 2.00GHz, 80 Watts, 1333 FSB	435952-L21
	Quad-Core Intel Xeon Processor E5320 – 1.86GHz, 80 Watts, 1066 FSB	435950-L21
	Quad-Core Intel Xeon Processor L5320 – 1.86GHz, 50 Watts, 1066 FSB	435958-L21
	Quad-Core Intel Xeon Processor E5310 – 1.60GHz, 80 Watts, 1066 FSB	438314-L21
	Dual-Core Intel Xeon Processor 5160 – 3.00 GHz, 80 Watts, 1333 FSB	416579-L21
	Dual-Core Intel Xeon Processor 5150 – 2.66 GHz, 65 Watts, 1333 FSB	416577-L21
	Dual-Core Intel Xeon Processor 5148 – 2.33 GHz, 40 Watts, 1333 FSB	416575-L21
	Dual-Core Intel Xeon Processor 5140 – 2.33 GHz, 65 Watts, 1333 FSB	416573-L21
	Dual-Core Intel Xeon Processor 5130 – 2.00 GHz, 65 Watts, 1333 FSB	416571-L21
	Dual-Core Intel Xeon Processor 5120 – 1.86 GHz, 65 Watts, 1066 FSB	416569-L21
	Dual-Core Intel Xeon Processor 5110 – 1.60 GHz, 65 Watts, 1066 FSB	416567-L21
	NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.	

Configuration Information - Factory Integrated Models

Base Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB LP Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB LP Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
Storage Controllers	HP E200i Controller FIO NOTE: If selected, must choose one of the two cache modules below.	399548-B21
	HP Smart Array E200 64MB FIO Cache NOTE: Supports Smart Array E200 Controller only.	405102-B21
	128MB Battery-Backed Write Cache with Battery Housing NOTE: Supports Smart Array E200i Controller.	346914-B21
	Smart Array P400i controller for DL360 G5 NOTE: If selected, must choose one of the two cache modules below.	413741-B21
	HP Smart Array P400 256MB Cache FIO NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.	405139-B21
	512MB Battery-backed cache upgrade NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.	405148-B21
	HP Smart Array P600/256 BBWC Controller NOTE: Requires PCI-X Riser option (PN 405154-B21). NOTE: Requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).	337972-B21
	HP Smart Array 6402/512 FIO Controller	441508-B21
	HP Smart Array 6404/512 FIO CNTRLR	452240-B21

Step 3: Choose Additional Factory Integratable Options

Performance Packs	The HP ProLiant DL360 G5 performance packs are necessary to configure a HP ProLiant DL360 G5 Performance Model. HP ProLiant DL360 G5 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor, redundant power supplies, Smart Array P400i Controller with 256MB of BBWC, and storage cable to enable the all 6 disk drive bays. NOTE: 331903-B21 Slimline CD-RW/DVD-ROM Combo Drive Option Kit should also be selected along with the Performance Pack skus below to achieve parity to the HP ProLiant DL360 G5 Performance Models.	
	HP DL360G5 X5160 HPM FIO Perf Pack	430107-B21
	HP DL360G5 X5150 HPM FIO Perf Pack	431883-B21
	HP DL360G5 E5345 HPM FIO Perf Pack	435960-B21
	HP DL360G5 X5450 HPM FIO Perf Pack	457951-B21

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Options" section below.

NOTE: Some options may not be factory integratable. Contact your local sales representative for additional information.

HP ProLiant DL360 G5 Unique Options	Quad-Core Intel Xeon Processor X5460 (3.16GHz, 120 Watts, 1333 FSB)	457929-B21
	Quad-Core Intel Xeon Processor X5450 (3.00GHz, 120 Watts, 1333 FSB)	462858-B21
	Quad-Core Intel Xeon Processor E5450 (3.00GHz, 80 Watts, 1333 FSB)	457931-B21
	Quad-Core Intel Xeon Processor E5440 (2.83GHz, 80 Watts, 1333 FSB)	457933-B21
	Quad-Core Intel Xeon Processor E5430 (2.66GHz, 80 Watts, 1333 FSB)	457935-B21
	Quad-Core Intel Xeon Processor E5420 (2.50GHz, 80 Watts, 1333 FSB)	457937-B21
	Quad-Core Intel Xeon Processor E5410 (2.33GHz, 80 Watts, 1333 FSB)	457939-B21
	Quad-Core Intel Xeon Processor E5405 (2.00GHz, 80 Watts, 1333 FSB	457941-B21
	Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	435956-B21
	Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	435954-B21
	Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	435952-B21
	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
	Quad-Core Intel Xeon Processor L5320 (1.86 GHz, 50 Watts, 1066 FSB)	435958-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21
	Dual-Core Intel Xeon Processor 5160 (3.00 GHz, 80 Watts, 1333 FSB)	416579-B21
	Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB)	416577-B21
	Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB)	416575-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	416573-B21
	Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 65 Watts, 1333 FSB)	416571-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	416569-B21
	Dual-Core Intel Xeon Processor 5110 (1.60 GHz, 65 Watts, 1066 FSB)	416567-B21
	PCI-X Riser option NOTE: To convert full-length PCI-Express slot to PCI-X slot.	405154-B21

HP Insight Control and ProLiant Essentials Offerings	**ProLiant Essentials Value Pack** NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.	
	Accelerated iSCSI Pack	
	ProLiant Essentials Accelerated iSCSI Pack, No Media, Single License NOTE: For use with a single NIC port. Contains one license with a unique license activation key and documentation. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.html	452679-B21
	HP Insight Control Environment	
	HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	452148-B21
	ProLiant Essential RDMA Pack	

HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, No Media, 1-Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12573_na/12573_na.html	452681-B21
Rapid Deployment Pack	
ProLiant Essentials Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 server to be deployed and managed via RDP. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.html	452151-B21
HP Server Migration Pack - Universal Edition	
HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Contains one license with a unique license activation key and documentation.	460756-B21
HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	460750-B21
HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	460753-B21
Virtual Machine Management Pack	
ProLiant Essentials Virtual Machine Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.html	452153-B21
Remote Management NOTE: Electronic licensing options are available for Insight Control suites and select ProLiant Essentials software products. Please see the appropriate Insight Control and ProLiant Essentials QuickSpecs for additional information.	
Integrated Lights-Out Advanced Pack	
Integrated Lights-Out Advanced Pack, No Media ,1 Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_na/10861_na.html	452141-B21
Integrated Lights-Out Select Pack	

Options

	Integrated Lights-Out Select Pack, No Media, 1 Server License NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/10861_na/10861_na.html	452158-B21
	Integrated Lights-Out Power Management Pack	
	HP iLO Power Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This option kit includes 1 license for iLO Advanced and Insight Power Manager. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12632_na/12632_na.html	452145-B21
	Insight Power Manager	
	HP Insight Power Manager, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This option kit includes 1 license for Insight Power Manager. NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12623_na/12623_na.html	452677-B21
	NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information. NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.	
Processor	Quad-Core Intel Xeon Processor X5460 (3.16GHz, 120 Watts, 1333 FSB)	457929-B21
	Quad-Core Intel Xeon Processor X5450 (3.00GHz, 120 Watts, 1333 FSB)	462858-B21
	Quad-Core Intel Xeon Processor E5450 (3.00GHz, 80 Watts, 1333 FSB)	457931-B21
	Quad-Core Intel Xeon Processor E5440 (2.83GHz, 80 Watts, 1333 FSB)	457933-B21
	Quad-Core Intel Xeon Processor E5430 (2.66GHz, 80 Watts, 1333 FSB)	457935-B21
	Quad-Core Intel Xeon Processor E5420 (2.50GHz, 80 Watts, 1333 FSB)	457937-B21
	Quad-Core Intel Xeon Processor E5410 (2.33GHz, 80 Watts, 1333 FSB)	457939-B21
	Quad-Core Intel Xeon Processor E5405 (2.00GHz, 80 Watts, 1333 FSB	457941-B21
	Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	435956-B21
	Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	435956-B21
	Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	435954-B21
	Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	435952-B21
	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	435950-B21
	Quad-Core Intel Xeon Processor L5320 (1.86 GHz, 50 Watts, 1066 FSB)	435958-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	438314-B21
	Dual-Core Intel Xeon Processor 5160 (3.00 GHz, 80 Watts, 1333 FSB)	416579-B21
	Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB)	416577-B21
	Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB)	416575-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	416573-B21
	Dual-Core Intel Xeon Processor 5130 (2.00 GHz, 65 Watts, 1333 FSB)	416571-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	416569-B21
	Dual-Core Intel Xeon Processor 5110 (1.60 GHz, 65 Watts, 1066 FSB)	416567-B21

Memory (DIMMs)	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB LP Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB LP Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21
Smart Buy Memory (DIMMs)	1GB FBD PC2-5300 2X512MB Kit	397409-S21
	2GB FBD PC2-5300 2X1GB Kit	397411-S21
	4GB FBD PC2-5300 2X2GB Kit	397413-S21
Optical Drives	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
	Slimline CD-ROM Drive 24X	356963-B21
Diskette Drive	Slimline Ejectable Floppy drive	390164-B21
Hard Drives	**Hot Plug SFF SAS 2.5" Drives**	
	HP 36GB 3G SAS 10K SFF SP HDD	375859-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21
	HP 36GB 3G SAS 15K SFF DP HDD	418369-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 72GB 3G SAS 10K SFF DP HDD	384842-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 72GB 3G SAS 15K SFF DP HDD	418371-B21
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 146GB 3G SAS 10K SFF DP HDD	418367-B21
	NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML	
	SFF SATA Hot Plug	
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21
	HP 120GB 1.5G SATA 5.4K SFF HDD	431786-B21
	NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/11940_na/11940_na.HTML	

Options

Storage Controllers	SAS Controllers	
	Smart Array E200i Controller	
	128-MB Battery-Backed Write Cache (BBWC) NOTE: Supports Smart Array E200i Controller only.	346914-B21
	Smart Array E500 Controller	
	Smart Array E500/256MB Controller	435129-B21
	Smart Array P400i Controller	
	HP Smart Array P400/256MB BBWC Controller	399550-B21
	Battery-backed write cache upgrade NOTE: For Smart Array P400 Controller and Smart Array P400i Controller only.	383280-B21
	512MB Battery-backed cache upgrade NOTE: For Smart Array P400 Controller and Smart Array P400i Controller only.	405148-B21
	Smart Array P600 Controller	
	HP Smart Array P600/256 BBWC Controller NOTE: Requires DL360 G5 PCI-X conversion kit (PN 405154-B21).	337972-B21
	512 MB Battery-Backed Cache Upgrade NOTE: This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	372538-B21
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller	381513-B21
	NOTE: Please see the following Controller QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.HTML (Smart Array E500 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.HTML (Smart Array P600 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.HTML (Smart Array P800 Controller)	
	SAS HBA	
	HP SC44Ge Host Bus Adapter	416096-B21
	HP 8 Internal Port SAS HBA with RAID NOTE: Supports SAS and SATA disk drive. RAID 0,1 supported.	347786-B21
	NOTE: Please see the following QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12617_na/12617_na.html (SC44Ge HBA) http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html (SAS HBA)	
	SAS Cables	
	HP Mini SAS 4i 13.4 inch/0.35 m cable NOTE: Used to connect Smart Array P400i Controller to DL360 G5 5th and 6th drive bays.	399546-B21

Options

	HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable NOTE: Used to connect SA-P600, SA-P400, SA-E200 Controllers to the HP ProLiant DL360 G5 drive backplane. This kit supports all six drive bays.	411100-B21
	SCSI Controllers for External Drive/Storage Support	
	Smart Array 6402/128 Controller NOTE: For support of external drives only.	273915-B21
	Smart Array 6404/256 Controller NOTE: For support of external drives only.	273914-B21
	Smart Array 642 Controller NOTE: For support of external drives only.	291967-B21
	128MB Battery-Backed Cache Enabler NOTE: This 128-MB Battery-Backed Cache Module upgrade kit supports the Smart Array 642 Controller.	351580-B21
	512 MB Battery-Backed Cache Upgrade NOTE: This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	372538-B21
	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	SCSI HBA	
	HP SC11Xe Host Bus Adapter	412911-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/10429_na/10429_na.HTML (SCSI Adapter) http://h18000.www1.hp.com/products/quickspecs/11555_na/11555_na.HTML (U320 Adapter) http://h18000.www.1.hp.com/products/quickspecs/11943_na/11943_na.HTML (U320 SCSI HBA) http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML (SC11Xe HBA)	
Communications	HP NC110T PCI Express Gigabit Server Adapter NOTE: Does not support Windows 2000.	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter NOTE: Does not support Windows 2000.	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	HP NC510F PCIe 10 Gigabit Server Adapter NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	414126-B21
	HP NC510C PCIe 10 Gigabit Server Adapter NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	414129-B21
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21

Options

	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21
	HP IB 4X DDR PCI-e Dual Port HCA	409376-B21
	HP IB 4X DDR PCI-e SINGLE PORT HCA	448398-B21
Redundant Options	700W HP redundant power supply with IEC cord only	399542-B21

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see:
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

For recommended tape drive offerings for this ProLiant server see the following:

USB Tape Drives

HP StorageWorks 1U USB Rack-Mount Kit with one DAT 72 USB Tape Drive	AG594A
HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB Tape Drive	AG703A

SAS Tape Drives

NOTE: For the DL360 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

HP StorageWorks Ultrium 448 SAS Internal Tape Drive	DW085A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

HP StorageWorks Ultrium 920 SAS Internal Tape Drive	EH847A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite)	DW064A

NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:
http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html
http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html
For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect

SCSI DAT Drives

HP StorageWorks DAT 160 SCSI External Tape Drive	Q1574A

NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:
http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.html
For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: http://www.hp.com/go/connect

Options

	Rack-Mount Tape Drive Enclosures	
	HP StorageWorks 1U SCSI Rack-Mount kit NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, DLT VS160, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.	A7445B
	HP StorageWorks 1U USB Rack-Mount Kit NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 USB tape drives.	A8007A
	HP StorageWorks 1U SAS Rack-Mount Kit NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS and Ultrium 920 SAS tape drives.	AE459A
	NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits: http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.html	
HP D2D Backup System	HP StorageWorks D2D110 Backup System NOTE: 1TB of Disk Storage.	EH880A
	HP StorageWorks D2D110 Backup System with Data Protector Express Software Kit NOTE: 1TB of Disk Storage.	EH923A
	HP StorageWorks D2D120 Backup System NOTE: 2TB of Disk Storage.	EH884A
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit NOTE: 2TB of Disk Storage.	EH924A
	NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12651_na/12651_na.html	
Tape Autoloaders	**HP StorageWorks DAT Autoloader**	
	HP StorageWorks DAT 72x10 tape autoloader	AE313B
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 LTO-3 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader	AH558A
	HP StorageWorks 1/8 LTO-2 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 LTO-1 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	AH166A
	NOTE: Please reference the Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs.	

Options

Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library	AJ034A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
	HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 LTO-2 Ultrium 448 SCSI Drive Library	AG320A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Drive Library	AH171A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library	AG322A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
	HP StorageWorks MSL8096 Tape Library	
	HP StorageWorks MSL8096 2 LTO-3 Ultrium 920 SAS Drive Library	AH561A
	HP StorageWorks MSL8096 2 LTO-3 Ultrium 960 4GB FC Library	AH218A
	HP StorageWorks MSL8096 2 LTO-3Ultrium 960 SCSI Drive Library	AH219A
	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ039A
	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 4GB FC Library	AJ040A
	HP StorageWorks MSL6000 Tape Library	
	LTO-4 Ultrium 1840 technology	
	HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ029A
	HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 4GB FC Library	AJ030A
	HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ031A
	HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 4GB FC Library	AJ032A
	LTO-3 Ultrium 960 technology	
	HP StorageWorks MSL6030 1 LTO-3 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 LTO-3 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 LTO-3 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 LTO-3 Ultrium 960 Dr FC Library	AD609B

HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20 NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	335921-B21
	HP StorageWorks Modular Smart Array 20 Starter Kit NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	366172-B21

Options

HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.HTML	364430-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML	335880-B21
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
Cluster Options	ProLiant Cluster Starter Kit NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_na/11935_na.html (Worldwide)	364023-B22
	HP HA/F200 for Entry SAN Cluster NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_na/11932_na.html (Worldwide) NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: http://www.hp.com/solutions/highavailability/oracle	364026-B22
	HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux ProLiant Cluster, A.11.18 (2 license version - Red Hat EL 4&5, SUSE SLES10)	305199-B27

Options

	HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
	HP Serviceguard for Linux, A.11.18 (single license version - Red Hat EL 4&5, SUSE SLES10)	307754-B27
	HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
	NOTE: For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html (Worldwide)	
	NOTE: For configuration/certification options for HP Serviceguard for Linux please go to: http://www.hp.com/info/sglx	
StorageWorks Options	StorageWorks Fibre Channel HBA	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
	StorageWorks SCSI HBA	
	HP U320e SCSI Host Bus Adapter	AH627A
	NOTE: Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.	
Uninterruptible Power Systems – Rack Mountable	HP, R1.5kVA UPS, 1U	AF419A
	HP R3000 VA UPS, 2U, L5-30	AF422A
	HP R3000 VA UPS, 2U, L6-20	AF423A
	HP R5500 VA UPS	AF426A
Power Cords	NOTE: The HP ProLiant DL360 G5 ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).	
	Nema 5-15P to IEC320-C13	AF556A

Options

HP Monitored Power Distribution Unit (PDU)	**HP Monitored Power Distribution Unit: Full Rack Version**	
	17.3 kVA Monitored PDU Model S2324	AF503A
	8.6 kVA Monitored PDU Model S1324	AF504A
	16.6 kVA Monitored PDU Model S2140	AF505A
	8.3 kVA Monitored PDU Model S1140	AF506A
	22 kVA Monitored PDU Model S2316	AF507A
	11 kVA Monitored PDU Model S1316	AF508A
	14.7 kVA Monitored PDU Model S2132	AF509A
	7.3 kVA Monitored PDU Model S1132	AF510A
	4.9kVA Monitored PDU model S124	AF914A
	7.3kVA Monitored PDU model S132	AF915A
Modular PDUs 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	Fixed Cord Extension Bars	351655-B21
	NOTE: Two extension bar sticks; each with (7) C13 plugs.	
	3.6kVA Model - mPDU, 16A, High	252663-B24
	2.8 kVA Model - mPDU, 24A, Low	252663-D71
	4.9kVA Model - mPDU, 24A, High	252663-D72
	8.3kVA Model - mPDU, 40A, High	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached)	252663-D73
	8.3kVA Model - mPDU 40A, High (core only)	252663-D75
	4.9kVA Model - mPDU 24A, High (core only)	252663-D74
	NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML	
USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	HP 256MB USB 2.0 Floppy Drive Key	442084-B21
HP ProLiant DL360 G5 Deployment Options	700W HP redundant power supply with IEC cord only	399542-B21
Rack Kits	1U Cable Management Arm	365403-B21
	NOTE: Package contains two cable management arms.	

Options

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack Unassembled	358254-B21
	NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet – Pallet	AF001A
	10642 G2 (42U) Rack Cabinet – Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet – Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet – Pallet	AF011A
	10636 G2 (36U) Rack Cabinet – Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet – Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack 10000 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).	
	NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all HP equipment is qualified to be shipped in the Rack 10000 series	
	NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower	

Options

Keyboards and Monitors	TFT7210R Rack Mounted 17" Monitor	348373-B21
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack NOTE: Requires PS/2 and one USB port on server.	AF604A
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x4 Console Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Options

Service and Support Offerings (HP Care Pack Services)	*Hardware Services 4-Hour On-site Service*	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4496E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4497E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4498E
	Hardware Services Next Business Day On-Site Service	
	Hardware Installation, Electronic	U4506E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4507E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4508E
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4509E
	Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6310E
	Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8332E
	NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack.	

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

HP ProLiant DL360 G5 Entry and Base Models

Standard Memory
1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) installed (2 x 512 MB)

Upgrading Memory and Memory Interleaving
When upgrading memory, DIMMs 1A and 3A must match. DIMMs 5B and 7B, DIMMs 2C and 4C, and DIMMs 6D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

Standard Memory Plus Optional Memory
Up to 25 GB memory is available with the standard memory of 1 GB and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

Standard Memory Replaced with Optional Memory
Up to 32 GB of memory is available with the removal of the standard 512 MB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.
NOTE: 4 GB Fully Buffered DIMMs kits will be available shortly following server availability to allow a maximum of 32 GB. Today's maximum is 16 GB utilizing 2 GB DIMMs.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	1 GB	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	25 GB	512 MB	512 MB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, If banks A, B, C and D are populated, bank D is the spare bank, Online spare memory is configured through RBSU.
NOTE: Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Memory

HP ProLiant DL360 G5 Performance Models

Standard Memory

2 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (2 x 1 GB)

Upgrading Memory and Memory Interleaving

When upgrading memory, DIMMs 1A and 3A must match. DIMMs 5B and 7B, DIMMs 2C and 4C, and DIMMs 6D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

Standard Memory Plus Optional Memory

Up to 14 GB memory is available with the standard memory of 2 GB and the optional installation PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

Standard Memory Replaced with Optional Memory

Up to 32 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	2 GB	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	14 GB	1 GB	1 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, Online spare memory is configured through RBSU.

NOTE: Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
2 GB FBD PC2-5300 2 x 1 GB LP Kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB LP Kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Online spare FBDIMM configuration requirements (in addition to general configuration requirements):

- When only bank A is being used, it must be fully populated with dual-rank FBDIMMs.
- If banks A and C are being used, they must be fully populated.
- If installed, bank A and bank C must contain FBDIMMs with identical part numbers.
- If installed, bank B and bank D must also contain FBDIMMs with identical part numbers.

In online spare mode, FBDIMMs must be populated as specified in the following table:

Memory

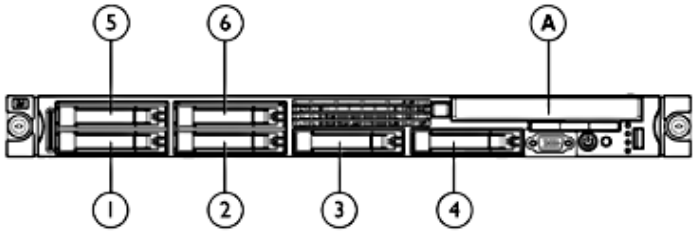
Configuration	Branch 0 Bank A 1A and 3A	Branch 0 Bank C 2C and 4C	Branch 1 Bank B 5B and 7B	Branch 1 Bank D 6D and 8D
1*	X	-	-	-
2	X	X	-	-
3	X	X	X	X
*NOTE: Configuration 1 is only supported if using bank A, populated with dual-rank FBDIMMs.				

Mirrored memory FBDIMMs configuration requirements (in addition to general configuration requirements):

- Banks A and B must be fully populated.
- Bank A and bank B must contain FBDIMMs with identical part numbers. If installed, bank C and bank D must also contain FBDIMMs with identical part numbers.

When using mirrored memory mode, FBDIMMs must be populated as specified in the following table:

Configuration	Bank A 1A and 3A	Bank B 5B and 7B	Bank C 2C and 4C	Bank D 6D and 8D
1	X	X	-	-
2	X	X	X	X



1-6	6 x SFF SAS Hot Pluggable Hard Drive Bays
A	Slimline Bay: Optional optical or floppy drive

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slimline 1.44-MB Diskette Drive	Up to 1	A	Integrated
Slimline 24x IDE CD-ROM Drive	Up to 1	A	Integrated IDE
Slimline DVD-ROM Drive (8x/24x) Option Kit (Servers)	Up to 1	A	Integrated IDE
Slimline DVD/CD-RW Combo Option Kit	Up to 1	A	Integrated IDE
Slimline DVD-RW Drive (8X) Option Kit	Up to 1	A	Integrated IDE

Hard Drives

Hot Plug SFF SAS 2.5" Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP 146GB 3G SAS 10K DP 72GB 3G SAS 10K SP 72GB 3G SAS 10K DP 72GB 3G SAS 15K SP 72GB 3G SAS 15K DP 36GB 3G SAS 10K SP 36GB 3G SAS 15K SP 36GB 3G SAS 15K DP	6	1-6	HP Smart Array E200i/64MB Controller HP Smart Array E500 Controller HP Smart Array P400i/512MB BBWC Controller HP Smart Array P400i/256MB Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller Please see NOTES below regarding hard drive quantity supported by Smart Array Controller.

NOTE: The Smart Array E200i Controller can support a maximum of 4 hard drives.
NOTE: The Smart Array P400i Controller can support a maximum of 6 hard drives. To support drives 5 and 6, the optional HP Mini SAS 4i 13.4 inch/0.35 m cable is required (PN 399546-B21).
NOTE: The Smart Array P600 Controller requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).

Storage

Serial-ATA (SATA) Hard Drive

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K 60GB 1.5G SATA 5.4K	6	1-6	HP Smart Array E200i/64MB Controller HP Smart Array E500 Controller HP Smart Array P400i/512MB BBWC Controller HP Smart Array P400i/256MB Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller Please see NOTES below regarding hard drive quantity supported by Smart Array Controller.

NOTE: The Smart Array E200i Controller can support a maximum of 4 hard drives.
NOTE: The Smart Array P400i Controller can support a maximum of 6 hard drives. To support drives 5 and 6, the optional HP Mini SAS 4i 13.4 inch/0.35 m cable is required (PN 399546-B21).
NOTE: The Smart Array P600 Controller requires HP SAS 4i to Mini SAS 4i 31 inch/.79 meter cable (PN 411100-B21).

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	Please see the Modular Smart Array 20 QuickSpecs to determine configuration requirements	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 30 Family	Please see the Modular Smart Array 30 QuickSpecs to determine configuration requirements.	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 50 Enclosure	2	External	HP Smart Array P600/256 BBWC Controller
Modular Smart Array 500 G2 System	1	External	Smart Array 642 Controller (used as Host Bus Adapter) Please see the Modular Smart Array 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500
Modular Smart Array 1500 cs	Please see the Modular Smart Array 1500 cs QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1500 cs QuickSpecs (URL below) for the latest list of supported HBAs
Modular Smart Array 1000	Please see the Modular Smart	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs

Array 1000 QuickSpecs below to determine configuration requirements

Modular Smart Array 1000: http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.html
Modular Smart Array 1500 cs: http://www.hp.com/go/MSA1500cs

Tape Drives, Tape Autoloaders, Tape Libraries & D2D Backup

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10233.html

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10809.html

NOTE: For complete listing of tape drive offerings see http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-2 Ultrium 460 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 DLT VS160 SDLT 600 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A

HP StorageWorks SAS Tape Drives, External LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS 1U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter NOTE: Recommended. HP Smart Array E500 Controller NOTE: The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support: HP Smart Array P400/256MB Controller HP Smart Array P400/512MB Controller	416096-B21 435129-B21 405132-B21 411064-B21
HP StorageWorks SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 Tape Autoloader MSL2024 MSL4048 MSL8096 MSL6000	External	HP SC11Xe Host Bus Adapter HP U320e SCSI Host Bus Adapter NOTE: Only valid for MSL tape libraries.	412911-B21 AH627A
HP StorageWorks SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP SC44Ge Host Bus Adapter NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	416096-B21
HP StorageWorks Fibre Tape Automation, External MSL2024 MSL4048 MSL6000	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks D2D Backup Systems D2D110 D2D120	External	Embedded Network Controller	N/A

Power Specifications

To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls

To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL360 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

System Unit	**Dimensions** (H x W x D) (with bezel)	1.70 x 16.78 x 27.75 in (4.32 x 42.62 x 70.49 cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	37 lb (16.78 kg)
		Minimum (one hard drive, power supply, and processor installed)	27.5 lb (12.47 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	8.5 A (at 100 VAC), 4.2 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	854 W (at 100 VAC), 844 W (at 200 VAC)
	BTU Rating	Maximum	2916 BTU/hr (at 100 VAC), 2882 BTU/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls - Click on the system of interest. Example: DL360 G5 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	700 W (at 100 VAC), 700 W (at 200 VAC)
		Maximum Peak Power	700 W (at 100 VAC), 700 W (at 200 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L_{WAd}	6.4 B
		L_{pAm}	49 dBA
		Operating	
		L_{WAd}	6.4 B
		L_{pAm}	49 dBA
Smart Array E200i Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)	
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors	
	Cache Memory Speed	DDR-1/266 MHz provides up to 4.2 GB/s maximum bandwidth.	
	Server Interface	x4 2.5G PCIe provides 2GB/s maximum bandwidth.	
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.	
	Cache Memory	40-bit 64MB or 128MB cache: ECC protection, battery-backed, and transportable	
	Logical Volumes Supported	Up to 32 logical volumes	
	Maximum Volume Capacity	3TB (6 x 500GB)	
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space	
	RAID Support	RAID 5 (Distributed Data Guarding) requires 128MB BBWC option RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping)	
	Upgradeable Firmware	Upgradeable Firmware	

Technical Specifications

Smart Array P400i Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)	
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors	
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.	
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.	
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.	
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable	
	Logical Drives Supported	Up to 32 logical drives	
	Maximum Logical Drive Capacity	3 TB (6 x 500GB)	
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space	
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)	
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature	
Embedded NC373i Multifunction Gigabit Server Adapters	Network Interface	10/100/1000-T	
	Compatibility	EEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.